

# Coonstripe Shrimp

## History of the Fishery

The commercial fishery for coonstripe shrimp (*Pandalus danae*) occurs off Crescent City, California primarily in depths ranging from 23 to 28 fathoms. This species, also known as dock shrimp, is often caught incidentally in ocean shrimp trawl nets and Dungeness crab traps along the northern California coast. Early efforts to develop a targeted commercial trap fishery were unsuccessful prior to 1995. The first significant commercial landings of 2,488 pounds were made in 1995. The developing live market and high price led to effort yielding 79,269 pounds in 1997. Landings dipped to 64,718 pounds in 1998 and then climbed to 75,540 pounds in 1999. Two vessels pioneered this fishery in 1995, while effort through 1999 ranged from eight to 20 vessels per year. The initial ex-vessel value in 1995 was \$1.50 per pound. However, since this species was destined for the live market, coonstripe shrimp quickly rose in value, averaging over \$4 per pound in 1998. Coonstripe shrimp ranked eighth in single species value for the Crescent City port during 1997 and 1998. The ex-vessel value rose again in 1999 to an average of \$4.22 per pound with some businesses paying as much as \$7.50 per pound.

The coonstripe shrimp trap fishery uses various trap configurations. The most common design is a rectangular trap covered in 1 3/8-inch mesh shrimp trawl webbing, with two circular openings. The traps are set in areas of high currents, such as along Saint George Reef from May through October. The traps are set in strings composed of between 20 and 30 traps per string. Fishermen report using 300 to 400 traps during the fishing season. Many types of bait are used including small pelagic fish such as herring, sardine, and mackerel.

To participate in the commercial fishery, a fisherman must be a registered commercial fisherman, have a commercial vessel registration and a general trap permit. In addition, a commercial coonstripe shrimp trapper must comply with all trap regulations regarding size of traps, destruct devices, marking the trap, and trap servicing. Currently, there are no other management restrictions on this fishery.

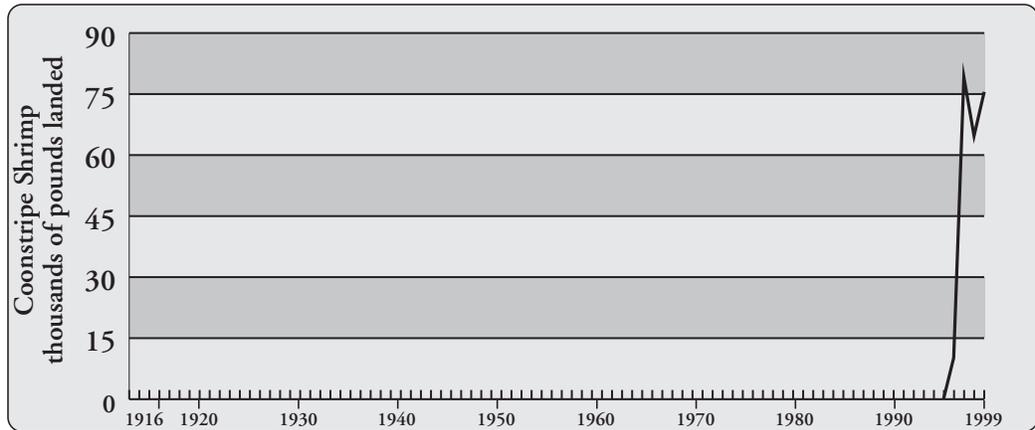
The developing commercial fishery led to an interest in a sport fishery for this resource since the shrimp are close to shore and are caught in small, lightweight traps. The sport fishing daily bag and possession limit was increased from 35 shrimp to 20 pounds per day in 1997. Data are not available on sport harvest, but take is thought to be minimal.

## Status of Biological Knowledge

Coonstripe shrimp, called dock shrimp in Oregon, Alaska and Canada, are red-brown shrimp and derive the name "coonstripe" from the irregular, black-edged brown or red striping found on the abdominal area. The surface of the species is finely pitted and has 10 to 12 median dorsal spines. The rostrum is a little longer than the carapace. They range from Sitka, Alaska to San Luis Obispo Bay, California in 10 to 100 fathoms, and prefer sand or gravel substrate in areas of strong tidal current. Exploratory trap surveys conducted in northern California yielded catches off Tolo Bank, False Cape, Patrick's Point and the Saint George Reef. Coonstripes have also been found in trawl surveys ranging in depth from 11 to 100 fathoms off the Eel River, Table Bluff, Humboldt Bay, Mad River, Trinidad Head, Big Lagoon, Patrick's Point, Redding Rock, Klamath River and Point Saint George. This species is a protandrous hermaphrodite - initially maturing as male and then undergoing transition to female. Egg bearing females may be found throughout the year, but gravid females primarily occur from November to April. Average fecundity is 1,140 eggs, and a progression of five larval stages occurs near the place of hatching. Research off British Columbia, showed that metamorphosis takes place by late June. Growth is rapid until October, when most shrimp mature as males at an average size of 0.50-inch carapace length (CL). Primary females, those maturing directly as females, also may be found. Some shrimp remain as males for another year and average 0.68 inch CL. Shrimp that transition to females over the first winter average 0.71 inch CL. Second year females average 0.85 inch CL. All shrimp are females by the third year and probably do not survive into the fourth year. Off Crescent City, count per pound for trap-caught females taken during the 1997 spring period ranges from 25 to 30 and males from 40 to 65. Large shrimp attain a length of five inches.

Data are lacking on the specific food habits of coonstripe shrimp, but most likely their diet is similar to that of other shrimp, feeding on planktonic and small benthic organisms. It is assumed that various species of fish such as lingcod, rockfish, flounder, hagfish, sole, or whiting, which prey on other shrimp species, are major predators. Like spot prawns, coonstripe shrimp undergo an onshore-offshore spawning migration pattern; however, along-shore movement within their range is unknown.

**Commercial Landings  
1916-1999,  
Coonstripe Shrimp**  
Commercial landing for  
Coonstripe Shrimp were not  
reported prior to 1996. Data  
Source: DFG Catch Bulletins and  
commercial landing receipts.



### Status of the Population

Due to the recent development of this fishery, there is too little fishery dependent data to determine what effect the commercial fishery has had on the coonstripe shrimp population or on the size composition of the population. To date there has been no fishery-independent estimates of population or structure.

### Management Considerations

See the Management Considerations Appendix A for further information.

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### References

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